

Listing of Claims:

1-32. (Canceled)

33. (Withdrawn) A method of manufacturing an implantable medical device, comprising forming a coating containing particles on an implantable medical device, wherein the particles are configured to remain in the coating during the release of an active ingredient to reduce a rate of release of the active ingredient from the coating after the device is implanted into a patient.

34. (Withdrawn) An implantable medical device comprising a coating, the coating produced in accordance with the method of Claim 33.

35. (Withdrawn) The method of Claim 33, wherein the particles are made from an inorganic material.

36. (Withdrawn) The method of Claim 33, wherein the particles are made from a material selected from the group consisting of metals, metal oxides, carbonaceous compounds, main group oxides, nitrides, carbides, calcium salts and mixtures thereof.

37. (Withdrawn) The method of Claim 33, wherein the particles are made from a material selected from the group consisting of rutile titanium oxide, anatase titanium dioxide, niobium oxide, tantalum oxide, zirconium oxide, iridium oxide, tungsten oxide, silica, alumina, gold, hafnium, platinum, iridium, palladium, tungsten, tantalum, niobium, zirconium, titanium, aluminum, chromium, lamp black, furnace black, carbon black, fumed carbon black, gas black, channel black, activated charcoal, diamond, titanium nitride, chromium nitride, zirconium nitride, tungsten carbide, silicon carbide, titanium carbide, hydroxyapatite, dahlite, brushite, tricalcium phosphate, calcium sulphate, calcium carbonate, silicides, barium titanate, strontium titanate and mixtures thereof.

38. (Withdrawn) The method of Claim 33, wherein the particles are made from a polymeric material.

39. (Withdrawn) The method of Claim 33, wherein the particles are made from a material selected from the group consisting of polyolefins, polyurethanes, cellulose, polyesters, polyamides, polyacrylates, liquid crystal polymers, polycarbonates, epoxies.

derived from bisphenol A based diepoxides, aliphatic polyketones, polysulfones, and mixtures thereof.

40. (Withdrawn) The method of Claim 33, wherein the particles are made from a material selected from the group consisting of poly(hexamethylene isophthalamide/terephthalamide), poly(ethylene terephthalate-co-p-oxybenzoate), polyacrylonitrile, acrylonitrile/styrene copolymer, rubber-modified acrylonitrile/acrylate copolymer, poly(methyl methacrylate), poly(phenylene sulfide), polystyrene, poly(vinyl alcohol), poly(ethylene-vinyl alcohol), poly(ester-sulfone), poly(urethane-sulfone), poly(carbonate-sulfone), poly(3-hydroxyoxetane), gelatin, amylose, parylene-C, parylene-D, parylene-N, and mixtures thereof.

41. (Withdrawn) The method of Claim 33, wherein the implantable medical device is a balloon expandable stent, a self-expandable stent, or a graft.

42. (Withdrawn) The method of Claim 33, wherein the implantable medical device is a stent having cavities carrying the active ingredient for the release of the active ingredient when the stent is implanted in a passageway of the patient.

43. (Withdrawn) The method of Claim 33, wherein the active ingredient is for the treatment of restenosis.

44. (Withdrawn) The method of Claim 33, wherein forming the coating comprises applying a composition to the device, the composition including the particles.

45. (Withdrawn) The method of Claim 44, additionally comprising prior to applying the composition, applying a second composition containing the active ingredient to a surface of the implantable medical device to form a reservoir coating on at least a portion of the surface of the implantable medical device.

46. (Withdrawn) The method of Claim 44, additionally comprising prior to applying the composition:

(a) applying a second composition to a surface of the implantable medical device to form a primer layer on at least a portion of the surface of the implantable medical device; and

(b) applying a third composition containing the active ingredient to the implantable medical device to form a reservoir coating on at least a portion of the primer layer.

47. (Withdrawn) The method of Claim 33, wherein the size of the particles is not greater than about 10% of the thickness of the coating.

48. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyolefin selected from the group of polyethylenes, poly(vinyl chloride), poly(vinylidene chloride), poly(vinyl fluoride), poly(vinylidene fluoride), poly(tetrafluoroethylene), poly(chlorotrifluoroethylene), and mixtures thereof.

49. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyurethane having a glass transition temperature above a storage temperature.

50. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyurethane having a non-polar soft segment, the non-polar soft segment being selected from the group consisting of hydrocarbons, silicones, fluorosilicones, and combinations thereof.

51. (Withdrawn) The method of Claim 33, wherein the particles are made from a cellulosic selected from the group consisting of cellulose acetate having a DS greater than about 0.8 or less than about 0.6, ethyl cellulose, cellulose nitrate, cellulose acetate butyrate, methyl cellulose, and mixtures thereof.

52. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyester selected from the group consisting of poly(ethylene terephthalate), poly(ethylene 2,6-naphthalene dicarboxylate), poly(butylene terephthalate), and mixtures thereof.

53. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyamide selected from the group consisting of nylon-6, nylon-6,6, nylon-6,9, nylon-6,10, aromatic nylon, and mixtures thereof.

54. (Withdrawn) The method of Claim 33, wherein the particles are made from a polyacrylate selected from the group consisting of poly(methylmethacrylate) and polymethacrylate

55. (Withdrawn) A method of manufacturing a coating for a stent, comprising:
applying a first composition to a stent, the first composition including a polymer, a solvent, and an active ingredient;
allowing the solvent to evaporate to form a first layer;
applying a second composition to at least a portion of the first layer, the second composition comprising a blend of a polymer, a solvent, and particles dispersed with the blend; and
allowing the solvent to evaporate from the second composition applied to the first layer to form a second layer on the stent, the particles being configured to remain in the second layer during the release of the active ingredient after the stent is implanted in a biological lumen to reduce a rate of release of the active ingredient from the stent.

56. (Withdrawn) The method of Claim 55, wherein the thickness of the second layer is about 0.1 microns to about 10 microns.

57. (Withdrawn) The method of Claim 55, wherein the size of the particles is less than or equal to about 10% of the thickness of the second layer.

58. (Withdrawn) The method of Claim 55, wherein the particle fraction volume of the second layer is greater than 0 and less than or equal to about 0.74.

59. (previously presented) A method of producing a coating on a stent, comprising:
(a) forming a first layer of a coating on a stent, the first layer including at least one polymer and at least one active ingredient; and
(b) forming a barrier layer on at least a portion of the first layer, the barrier layer comprising
(i) particles adapted to reduce a rate of release of the active ingredient from the first layer after insertion of the stent into a biological lumen, and
(ii) a first region and a second region, wherein the first region of the barrier layer has a greater particle volume fraction as compared to the second region of the barrier layer.

60. (previously presented) The method of Claim 59, wherein the particle volume fraction of the first region of the barrier layer is less than or equal to 0.74.

61. (previously presented) The method of Claim 59, wherein the first region of the barrier layer includes a first polymer and the second region of the barrier layer includes a second polymer.

62. (previously presented) The method of Claim 59, wherein the first layer of the coating further includes a first region disposed beneath the first region of the barrier layer, and a second region disposed beneath the second region of the barrier layer, wherein each of the first and second regions of the first layer includes a different active ingredient.

63. (previously presented) A method of producing a coating on a stent, comprising forming a coating on the stent, the coating including a first region and a second region, wherein each of the first and second regions includes particles, and wherein the first region has a greater particle volume fraction as compared to the second region.